Installation Guide

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NEWSTAR KVM SWITCH

NS221DD & NS441DD

User Manual

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INTRODUCTION

Thank you for purchasing NewStars Dual-Head KVM Switch!
NewStar is proud to introduce the professional two and four port Dual-Head Vision KVM Switch series. The multiple monitor concept represents a new direction in KVM technology as more modern systems are equipped with multiple video cards for increased screen display area. This feature is ideal for unique users and applications such as brokers and financial institutions, call centers, help desks, engineers, design houses and control rooms.

The Dual-Head Vision KVM series allows users to control 2 (NS221DD) and up to 4 (NS441DD) dual monitor enabled, USB computers from one PS/2 keyboard, PS/2 mouse and two video monitors. The Dual-Head Vision switches VGA-A/B and USB signals between computers. Crystal clear video resolution (up to 2048 x 1536 @85Hz) delivers professionals the ultimate switching experience. In addition, a built-in two-port USB hub allows USB device peripherals to be shared without having to disconnect and reconnect when switching computers.

Installation is simply a matter of plugging your PS/2 peripherals into the switch, connecting the cables to the computers you want to control. Instantly select computers using simple Hotkeys from your keyboard or front panel port selectors. Designed for the latest multi-media environments the switch supports audio and comes with built-in microphone and speaker jacks. Use one microphone for audio input and listen to the audio output of each computer on one set of speakers (on a one-computer-at-a-time basis).

Flash upgrades allow you to keep up with the latest firmware upgrades for your KVM switch so that you stay compatible with the latest peripheral devices.

FEATURES

- Allows users to control 2 or up to 4 USB enabled computers equipped with Dual-VGA Cards from one PS/2 keyboard, PS/2 mouse and two VGA monitors
- Designed for computers that have Dual-Monitor (HDDB15) VGA Cards - does not work with DVI (Digital Video Interface)
- Audio support for multimedia environments - front panel Audio and microphone ports for easy access
- Computer switching via Hotkeys or logically designed port selectors
- Built-in 2 port USB hub for device sharing
- Asynchronously switch between computers and multiple USB peripheral devices using fast Hot Keys - e.g. print from one USB computer while working on another!
- Crystal Video resolution - up to 2048 X 1536 @85Hz
- LEDs for status monitoring
- Auto scan for easy monitoring of computers
- Easy installation - No software to install
- Keyboard and mouse emulation on all ports ensures error free booting
- Supports Microsoft IntelliMouse®, IntelliMouse Explorer® and other common wheel mice
- Supports Japanese keyboard & mouse systems
- Keyboard Caps Lock, Num Lock, Scroll Lock states auto saved
- Flash upgradeable firmware allows you to obtain the latest firmware upgrades

PACKAGE CONTENTS

Item	Qty	Remark
KVM Switch	1	Dual-Head KVM Switch
Power Adapter	1	DC 9V, 600mA Adapter
User Manual	1	

SPECIFICATIONS

Computer connections:	
Monitor A / Audio / Microphone	2/4 sets: HDDB 15 pin Male
Monitor B / Keyboard / Mouse	2/4 sets: HDDB 15 pin Female
Console Connections:	
Keyboard	1 set: PS/2 Mini Din 6 Pin Female
Mouse	1 set: PS/2 Mini Din 6 Pin Female
Monitor A	1 set: HDDB 15 pin Female
Monitor B	1 set: HDDB 15 pin Female
USB Devices	2 sets: USB 1.1 A-type
Front Panel Speaker (Headphone)	1 set: 3.5mm audio jack
Real Panel Speaker	1 set: 3.5mm audio jack
Microphone	1 set: 3.5mm audio jack
Port LEDs	2/4
Hot Keys	Yes
Resolution	2048 x 1536 @ 85Hz
Dimensions(W x D x H)	235 x 136 x 44.5mm
Weight	890 / 895g
Operating Temp	32° to 104°F (0°-40°C)
Storage Temp	-4° to 140°F (-20°-60°C)
Humidity	0 - 80% RH, non-condensing
Flash upgradeable	Mini USB B-type
Power Supply	DC 9V, 600mA adapter
Warranty	18 months

Note: Specifications are subject to change without notice.

APPLICATIONS

Use wherever you have multiple computers with Dual-VGA cards;

- Financial Trading Floors
- Banking and engineering sectors
- CAM/CAD applications
- Designer houses, engineers, CGI and web-artists
- Emergency Dispatch Centers

OVERVIEW

Hot Keys
Hot keys allow you to use designated key commands to switch computers and connected USB devices. Control multiple computers using a simple hot key sequence from your keyboard.

AutoScan
The AutoScan function allows you to automatically scan and monitor all computers - one by one, that are connected to your KVM Switch.

Video Resolution
With a 400MHz video bandwidth, the Dual-Head KVM Switch supports video resolutions of up to 2048 x 1536 @ 85Hz. To preserve signal integrity at high resolutions, only 75-Ohm coaxial VGA cabling is recommended.

Front-Panel Port Selectors
Push buttons conveniently located on the front panel of the KVM Switch, which allow for simple, manual port selection.

LED Display
Front panel Port LEDs allow for easy status monitoring. A lit LED indicates which computer the KVM console currently has control of.

Multimedia support
Designed for the latest multimedia environments the switch supports audio and comes with built-in microphone and speaker jacks.

USB Switching
2 level switching technology allows users to asynchronously switch between USB computers and multiple USB peripheral devices using fast Hot Keys - e.g. print from one USB computer while working on another!

Flash Upgrades
The upgrade ability allows you to obtain the latest firmware upgrades for your KVM Switch. These upgrades allow constant compatibility with the latest devices and computers.

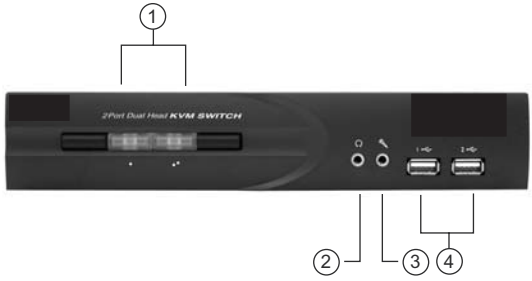
EQUIPMENT REQUIREMENTS

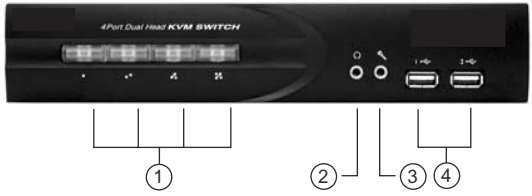
Cables

To preserve signal quality (up to 2048 x 1536 @ 85Hz) only NewStar cable sets are recommended for your KVM switch. Each VGA-USB computer that is to be connected to the KVM Switch requires one VGA / Audio cable and one VGA / USB cable.

DISPLAY DIAGRAMS

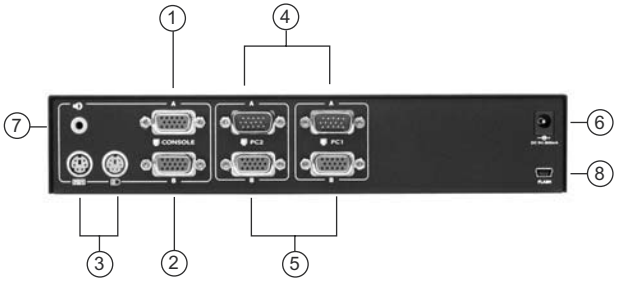
Front View

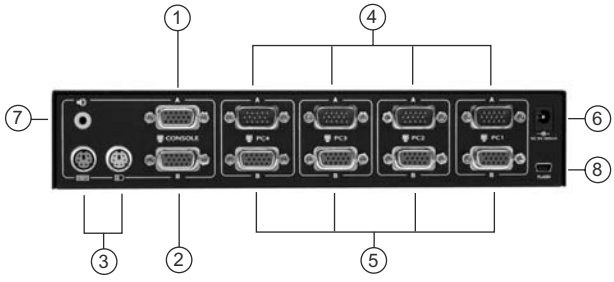




1. Direct access LED port selectors
   Lights RED indicating that the connected computer is powered and running (ONLINE)
   Changes to GREEN indicating that the connected computer has the KVM focus (SELECTED).
2. Headphone (Audio) jack
3. Microphone jack
4. USB device input ports

Rear View





1. Console VGA-A port
2. Console VGA-B port
3. Console PS/2 keyboard and PS/2 mouse ports
4. Computer VGA / audio / microphone ports
5. Computer VGA / keyboard / mouse ports
6. Power Jack (DC 9V, 600mA)
7. Console audio jack
8. Flash upgrade port (Mini USB B-type)

INSTALLATION

Where to Place the KVM Switch:

TheDual-Head KVM Switch is small, portable and designed to fit right on the desktop. Before installation consider the following when deciding where to place the KVM Switch;

whether or not you intend to use the manual port selectors for port switching

the length of the cables attached to your keyboard, mouse, and monitor

the location of your computers from your console

the length of the cables you use to connect your computers to the KVM switch

Cable Distance Requirements:

USB signals are the strongest when transmitted up to 15 feet (4.5m) between the KVM and the CPU. Beyond 15 feet (4.5m), probability of signal degradation, which can cause the device to fail, is likely.

Cautions and Warnings:

Avoid placing cables near machines that create electrical noise such as fluorescent lighting, air conditioning equipment, etc.

HARDWARE INSTALLATION

This section provides you complete instructions for the basic hardware setup of a single switch.

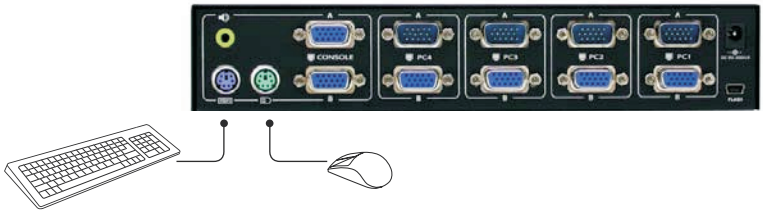
Important Note:

Before you begin, make sure that power to all the devices you will be connecting up have been powered off.

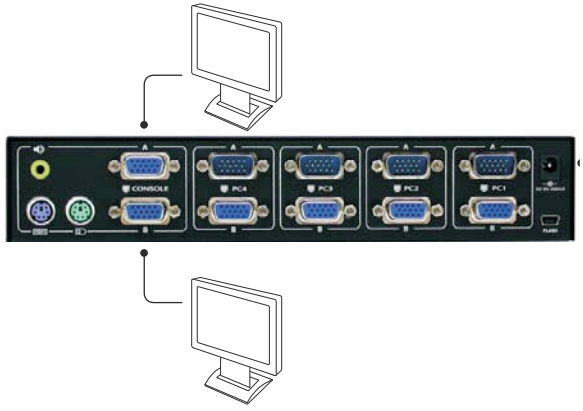
Note: To prevent damage to your installation due to ground potential difference, make sure that all devices on the installation are properly grounded.

Connecting the Console

1. Power off all computers.
2. Connect your PS/2 keyboard and PS/2 mouse directly into the PS/2 keyboard and mouse ports (as designated by the console "keyboard" and "mouse" symbols) on the rear of the KVM switch.



3. Connect your VGA monitor cables attached to your VGA monitors and connect them to the console VGA monitor ports (as designated by the console "monitor" symbol) on the rear of the KVM switch.



4. Connect any USB devices you wish to share as "USB Device 1, USB Device 2" on the front panel of the KVM switch.

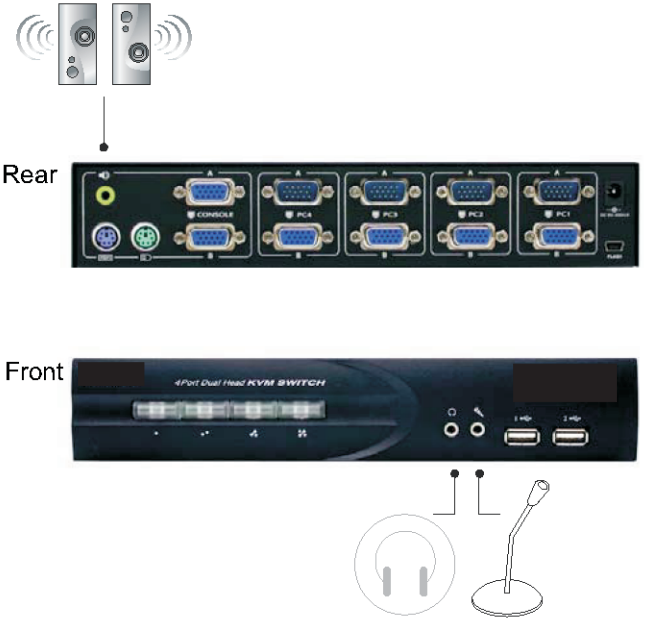
Note: When sharing USB devices, do not switch while devices are operating.

Powering-Up the KVM Switch

1. Connect the barrel of the 9V, 600mA power adapter to the power jack on the rear of the Switch. Then plug the power adapter cable into an available power outlet.

Connecting Microphone and Speakers (Optional)

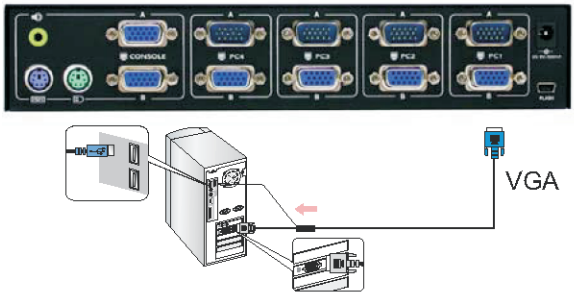
1. Connect your speakers/headphones (3.5mm) and microphone (3.5mm) as designated by the "Speaker" and "Microphone" symbols on the front and rear panel of the KVM switch.



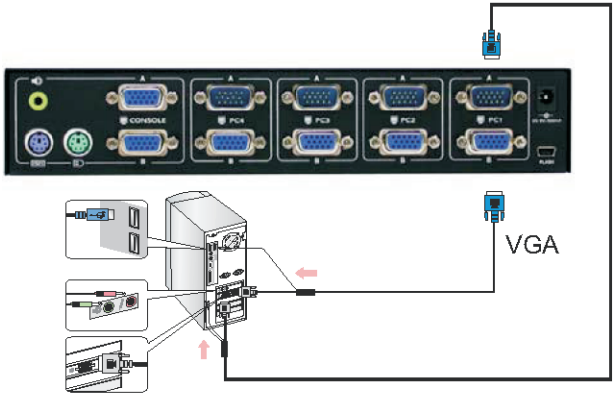
Note: The Switch's front speaker and audio port or the rear panel console speaker and audio port can be conveniently used. Using both front and rear speaker / audio ports simultaneously will result in loss of rear audio.

Connecting the Computers

1. Using Dual-Head (VGA / USB) cable set, connect the male VGA connector to the corresponding female VGA port 1 on the back of the computer. Take the other male VGA cable end and connect it to the rear of the KVM Switch designated as "PC1" VGA-B. Then take the attached USB (type A) cable end and connect it to the back of the computer USB port.



2. Using Dual-Head (VGA / Audio) cable set,
   connect the male VGA connector to the corresponding female VGA port 2 on the back of the computer. Take the other female VGA cable end and connect it to the rear of the KVM Switch designated as "PC1" VGA-A.



3. Then connect the attached speaker / audio connector to the computer's audio-output port. Do the same for the microphone connection (This step is optional and is not required to use the KVM switch.)
4. Repeat steps 1 through 3 for all computers.
5. Power on your computers, and refer to the operation instructions.

Note: Audio and microphone support is designed on a one-computer-at -a-time basis.

OPERATION

Powering Up the Systems

Once all cables have been connected and all computers have been powered up the Switch emulates mouse and keyboard signals on each port allowing your computer to boot normally. Your KVM switch is now ready for use.

Controlling your computers with the Dual-Head Vision KVM couldn't be easier. The Switch allows you to access the computers and USB hub devices using two methods of port selection:

Easy to use Port-Selectors or
Simple Hot Key combinations from the keyboard

Selecting Computers via Manual Port Selectors

You can instantly select any computer by pressing the port-selectors on the front of the KVM Switch. The corresponding LED will light "Green" to indicate current port selection.

Selecting Computers via Hot Keys

You can directly switch the KVM focus to any computer via the simple keyboard command sequence using the "Scroll Lock" key and entering the switch port number. Each computer is assigned a numeric ID.

1. To invoke the Hot key mode press the **"SCROLL LOCK"** key twice within two seconds. Note that a signal 'beep' will be given as confirmation.
2. Enter your desired switch port number (1-4).

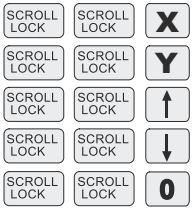
For example, if you press ***[SCROLL LOCK]***,***[SCROLL LOCK]***, "2" the computer on port 2 will be selected.

Alternatively, you can switch the KVM focus to any computer via the simple keyboard command sequence using the **"SCROLL LOCK"**key and Up and Down arrow keys.

1. To invoke the Hot key mode press the **"SCROLL LOCK"**key twice within two seconds. Note that a signal 'beep' will be given as confirmation.
2. Press the **Up**or**Down**arrow keys to switch to the **Previous**or**Next**port respectively.

Hot Key Commands

- Switch to PC □X"
- Switch to USB device only
- Previous active PC
- Next active PC
- Auto Scan
- Stop Auto Scan



(X = 1,2,3,4)
(Y=Function key;F1,F2,F3,F4)

Note: After switching ports there is a delay of up to 1-2 seconds before the video displays. This is normal and is due to the refresh rate of the video signal.

Selecting USB Devices connected to the 2-Port USB Hub

The Dual Head Vision's built-in 2 port USB (V1.1) hub allows you to connect two additional shared peripherals on a "one-computer-at-a-time" basis. When you connect a USB device to the KVM Switch, the device can be accessed through any computer that is connected to the installation via a simple Hot Key command sequence.

Switching USB devices only

Using the simple Hot Key command sequence below, you can share any device attached to the built-in USB hub from your currently selected computer;

1. To invoke the Hot key mode press the **"SCROLL LOCK"**key twice within

two seconds.
2. Press the corresponding **[FUNCTION]**key.

(Where F1=PC1, F2=PC2, F3=PC3,F4=PC4.)

*For example; pressing **[SCROLL LOCK],[SCROLL LOCK], [F2]**, switches USB Hub access to the computer on port 2.*

Switching to another computer but allowing USB device access to remain on the current port

Using the simple Hot Key command sequence below, you can asynchronously switch the KVM focus and USB devices. For example, you can print from one computer and switch the KVM focus to another computer simultaneously.

1. To invoke the Hot key mode press the **"SCROLL LOCK"**key twice within two seconds.
2. Press the corresponding port number (1-4).

*For example; pressing **[SCROLL LOCK],[SCROLL LOCK] "3"**, switches the KVM focus to the computer on port 3, but USB device access remains on the port it was.*

Note: Some USB storage devices are not suitable for dynamic port switching applications.

AutoScan Mode

The AutoScan feature allows you to monitor the activity of the connected computers at regular 10 second intervals so that you can monitor the computer activity without having to take the trouble of switching yourself. This time interval cannot be changed.

To invoke AutoScan Mode press **[SCROLL LOCK], [SCROLL LOCK], "0"**.

Note: The interval between these two keys should be no more than 0.5 seconds. Once scanning begins, it continues until you press **any key**to exit AutoScan Mode.

Flash-Upgrade

With internet flash-upgrade capability you can update your KVM Switch with the latest firmware upgrades via a parallel connection.

To update the firmware, you will need the following items

1. A separate computer running Windows 95, 98, ME, or XP. This computer must not be connected to the CPU ports on your KVM switch.
2. An available parallel port on the computer.
3. A custom flash cable (Mini USB B-type to USB A-type)

FCC CERTIFICATIONS

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- Shielded interface cables must be used in order to comply with emission limits.
- You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.
- This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

VCCI Warning

注意
この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の基準に基づく第一種情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

LIMITED WARRANTY

NewStar provides this limited warranty for its product only to the person or entity who originally purchased the product from NewStar or its authorized reseller or distributor.

Limited Hardware Warranty:

NewStar warrants that the hardware portion of the NewStar products described below (Hardware) will be free from material defects in workmanship and materials from the date of original retail purchase of the Hardware, for the period set forth below applicable to the product type (Warranty Period) if the Hardware is used and serviced in accordance with applicable documentation; provided that a completed Registration Card is returned to an Authorized NewStar Service Office within ninety (90) days after the date of original retail purchase of the Hardware.
If a completed Registration Card is not received by an authorized NewStar Service Office within such ninety (90) period, then the Warranty Period shall be ninety (90) days from the date of purchase.

Product Type	Warranty Period
Product (excluding power supplies and fans)	One (1) Year
Power Supplies and Fans	One (1) Year
Spare parts and spare kits	Ninety (90) days

NewStar's sole obligation shall be to repair or replace the defective Hardware at no charge to the original owner. Such repair or replacement will be rendered by NewStar at an Authorized NewStar Service Office.
The replacement Hardware need not be new or of an identical make, model or part; NewStar in its discretion may replace the defective Hardware.